



# How I Spent My Moore's Law Dividend

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Software for the Real World Panel

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# How Hard Can it Be?

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- What we *should* mean when we say embedded software will get more complex:
  - More internal trade-off/coord issues, e.g. power, noise, signal/info fusion, etc.
  - Non linear control models
  - Uncertainty with highly interdependent variables and events
  - Simultaneous model selection and parameter estimation
  - Detailed models of physical, biological, psychological and social systems

# What might we need?

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- Lots of anytime algorithms
- Lots of computation about time for & value of further computation, communication
- Lots of dynamic planning, scheduling, reconfiguration, interfacing of components
- Essential:
  - Incremental Development
  - Early testing, esp. operational testing

# Plus *a few of my favorite things*

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- Enable reuse by making interfaces:
  - Tolerant
  - Active
  - Negotiated
- Make our systems self-adaptive:
  - Self aware (self describing)
  - Self monitoring
  - Self repairing